AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/516,171

Atty. Docket No. Q58064

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A channel estimation method for a digital telecommunication station, comprising ~~the steps of~~:

detecting a frequency correction burst by scanning of a wanted channel;

providing time and frequency synchronizations by using said frequency correction burst;

receiving a synchronization burst;

cross correlating a received training sequence contained in said synchronous burst with a selected subset of an expected training sequence to obtain a channel estimate, wherein the received training sequence is a 64 bit training sequence of a GSM system included in said synchronization burst transmitted by a base station of a cellular telephone network, and said selected subset comprises the 21st through the 44th symbols of said received training sequence;

deriving a frequency error estimate from said channel estimate;

correcting the frequency error of the received burst in accordance with said frequency error estimate;

equalizing the received synchronous burst; and

providing time and frequency synchronizations again by using said corrected frequency correction burst.

2 – 4. (Cancelled).

5. (Original) A channel estimation method according to claim 1, wherein the training sequence is an adaptive training sequence.

6. (Currently Amended) A channel estimation method according to claim [[2]] 1, wherein the training sequence is an adaptive training sequence.

7. (Original) A channel estimation method according to claim 1, wherein the selected subset is an adaptive subset.

8. (Currently Amended) A channel estimation method according to claim [[2]] 1, wherein the selected subset is an adaptive subset.

9. (Original) A channel estimation method according to claim 6, wherein the selected subset is an adaptive subset.

10. (Original) A channel estimation method according to claim 1, wherein the frequency error estimate is obtained by a Doppler tracking phase locked loop.

11. (Currently Amended) A channel estimation method according to claim [[2]] 1, wherein the frequency error estimate is obtained by a Doppler tracking phase locked loop.

12. (Currently Amended) A channel estimation system for digital communications, comprising:

a frequency detection element for detecting a frequency correction burst in a desired channel located by scanning, said frequency detection element further detecting from the frequency correction burst selective time and frequency coordination data;

a receiver element for receiving a synchronization burst of data;

a cross-correlation element within said receiver element for correlating a training sequence contained in said synchronization burst of data with a selected subset of an expected training sequence to obtain a channel estimate;

deriving a frequency error estimate from said channel estimate by ~~comparing~~ processing said channel estimate in conjunction with a prior symbol training sequence;

correcting the frequency error of the received burst in accordance with said frequency error estimate;

equalizing the received synchronization burst; and

providing time and frequency synchronizations again by using said corrected frequency correction burst.

13. (Previously Presented) A channel estimation system according to claim 12, wherein the received training sequence is part of the signal within a synchronization burst of data transmitted by a base station of a cellular telephone network.

14. (Previously Presented) A channel estimation system according to claim 13, wherein the received training sequence is the 64 bit training sequence of a GSM system.

15. (Currently Amended) A channel estimation system according to claim 13, wherein the selected subset comprises the 21st through [[to]] the 44th symbols of the training sequence.

16. (Previously Presented) A channel estimation system according to claim 12, wherein the training sequence is an adaptive training sequence.

17. (Previously Presented) A channel estimation system according to claim 13, wherein the training sequence is an adaptive training sequence.

18. (Previously Presented) A channel estimation system according to claim 12, wherein the selected subset is an adaptive subset.

19. (Previously Presented) A channel estimation system according to claim 13, wherein the selected subset is an adaptive subset.

20. (Previously Presented) A channel estimation system according to claim 17, wherein the selected subset is an adaptive subset.

21. (Previously Presented) A channel estimation system according to claim 12, wherein the frequency error estimate is obtained by a Doppler tracking phase locked loop.

22. (Previously Presented) A channel estimation system according to claim 13, wherein the frequency error estimate is obtained by a Doppler tracking phase locked loop.

23. (New) A channel estimation method for a digital telecommunication station, comprising:

detecting a frequency correction burst by scanning of a wanted channel;

providing time and frequency synchronizations by using said frequency correction burst;

receiving a synchronization burst;

cross correlating a received training sequence contained in said synchronous burst with a selected subset of an expected training sequence to obtain a channel estimate;

deriving a frequency error estimate from said channel estimate by processing said channel estimate in conjunction with a prior training sequence;

correcting the frequency error of the received burst in accordance with said frequency error estimate;

equalizing the received synchronous burst; and

providing time and frequency synchronizations again by using said corrected frequency correction burst.

24. (New) A channel estimation system for digital communications, comprising:

a frequency detection element for detecting a frequency correction burst in a desired channel located by scanning, said frequency detection element further detecting from the frequency correction burst selective time and frequency coordination data;

a receiver element for receiving a synchronization burst of data;

a cross-correlation element within said receiver element for correlating a training sequence contained in said synchronization burst of data with a selected subset of an expected training sequence to obtain a channel estimate, wherein the training sequence is a 64 bit training sequence of a GSM system included in said synchronization burst transmitted by a base station of a cellular telephone network, and said selected subset comprises the 21st through the 44th symbols of said received training sequence;

deriving a frequency error estimate from said channel estimate;

correcting the frequency error of the received burst in accordance with said frequency error estimate;

equalizing the received synchronization burst; and

providing time and frequency synchronizations again by using said corrected frequency correction burst.